



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/864,918	05/24/2001	Charles Carpenter	7631.89	1700

7590 12/10/2003

Allen, Dyer, Doppelt, Milbrath & Gilchrist, P.A.  
255 South Orange Avenue, Suite 1401  
P.O. Box 3791  
Orlando, FL 32802-3791

EXAMINER

KIM, PAUL D

ART UNIT	PAPER NUMBER
----------	--------------

3729

DATE MAILED: 12/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/864,918

Applicant(s)

CARPENTER, CHARLES

Examiner

Paul D Kim

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,6-13,15,19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,6-13,15,19 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This office action is a response to the amendment filed on 9/29/2003.

#### ***Specification***

2. The abstract of the disclosure is objected to because the abstract does not sufficiently describe the claimed invention. Correction is required. See MPEP § 608.01(b).
3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: --A METHOD FOR ARRAY PROCESSING OF SURFACE ACOUSTIC DEVICES--.

#### ***Claim Objections***

4. Claims 1, 2, 6-13, 15, 19 and 20 are objected to because of the following informalities:

Re. Claim 1: The phrase "sealing a lid" recited in line 14 should be --sealing the lid--.

Re. Claim 19: The phrase "a lid sealed" recited in line 14 should be --the lid sealed--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 6-10, 11-13, 15, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yatsuda et al. (US PAT. 6,321,444) in view of Chung (US PAT. 6,428,650).

Yatsuda et al. teach a process of making a SAW device comprising steps of: forming a material (12) having a first and second surfaces and a cavity (12e) from the first surface as shown in Fig. 1; forming a recess from the first surface to receive a lid (12f) within the recess; providing at least two conductive paths (12i) from the cavity to the one of the first and second surfaces as shown in Fig. 2 and 3; inserting and attaching a SAW die (10) in a flip-chip mounting in to the cavity, the SAW die having conductive means (see Fig. 2) electrically connecting the at least two conductive paths (see Fig. 3) within the corresponding cavity; and sealing the lid in the recess over the inserted SAW die as shown in Fig. 1 (see also col. 5, line 5 to 7, line 18).

As per claims 6-10 and 15 a sealant (12g) is inserted between the lid and the recess as shown in Fig. 1. The sealant (solder or resin) is cured by heating (col. 1, lines 62-66).

As per claims 12 and 13 the material is made of non-conductive material such as a piezoelectric substrate, e.g. quartz crystal (col. 1, lines 32-40).

As per claim 20 the recess has a larger diameter than the cavity in order to form an area of overlap and the lid is sealed in each recess the area of the overlap as shown in Fig. 1.

However, Yatsuda et al. do not teach a plurality of cavities extending into the array from the first surface and separating the array into individual SAW devices. Yatsuda et al. only teach a fabricating a single SAW device. Chung teaches a process of a plurality of optical devices including a process of providing each lid over each inserted optical device as shown in Fig. 4 and separating the wafer (132) into individual optical device as shown in Fig. 7. Therefore, it would also have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a process of fabricating a SAW device of Yatsuda et al. by providing a wafer and separating the wafer individual optical device as taught by Chung for the purpose of optimizing production of SAW devices to reduce a production cost and time.

7. Claims 2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimoto et al. in view of Chung, further in view of Yoshihara et al. (US PAT. 5,824,177).

Yoshimoto et al. in view of Chung, teach all of the limitations as set forth above except a process of forming a tape means over the lid and substrate. Yoshihara et al. teach a method for making a semiconductor device including a process of forming an adhesive layer (6) to cover a lid (1) prior to a cutting process to prevent movement of the structure during the cutting process as shown in Fig. 3E (col. 4, lines 57-64).

Therefore, it would also have been obvious at the time the invention was made to a

Art Unit: 3729

person having ordinary skill in the art to modify facilitating a process of making a packaged piezoelectric oscillator of Yoshimoto et al. in view of Chung, by forming an adhesive layer to cover a lid as taught by Yoshihara et al. for the purpose of preventing the movement of the composite structure during the cutting process.

As per claim 11 Yoshihara et al. also teach a process of placing the adhesive layer on the first surface, separating from the second surface while maintaining continuity of the adhesive layer across the first surface and removing the individual components (1) after the cutting process from the adhesive layer (6) as shown in Fig. 3E-4E.

### ***Response to Arguments***

8. Applicant's arguments with respect to claims 1, 2, 6-13, 15, 19 and 20 have been considered but are moot in view of the new ground(s) of rejection. Rejections are based on the newly cited reference.

Applicant argues that the prior art of record fails to disclose the claimed invention such as inserting the SAW die in a flip-chip bonding process. Examiner traverses the argument that Yoshimoto et al. teach a process of inserting the SAW die into the cavity by the flip-chip bonding process.

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

Art Unit: 3729

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

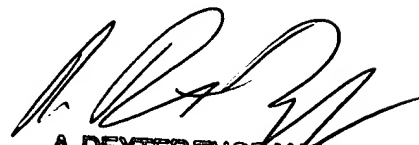
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D Kim whose telephone number is 703-308-8356. The examiner can normally be reached on Tuesday-Friday between 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-5648.

pdk

  
**A. DEXTER TUGBANG**  
**PRIMARY EXAMINER**